Merge sort Overview

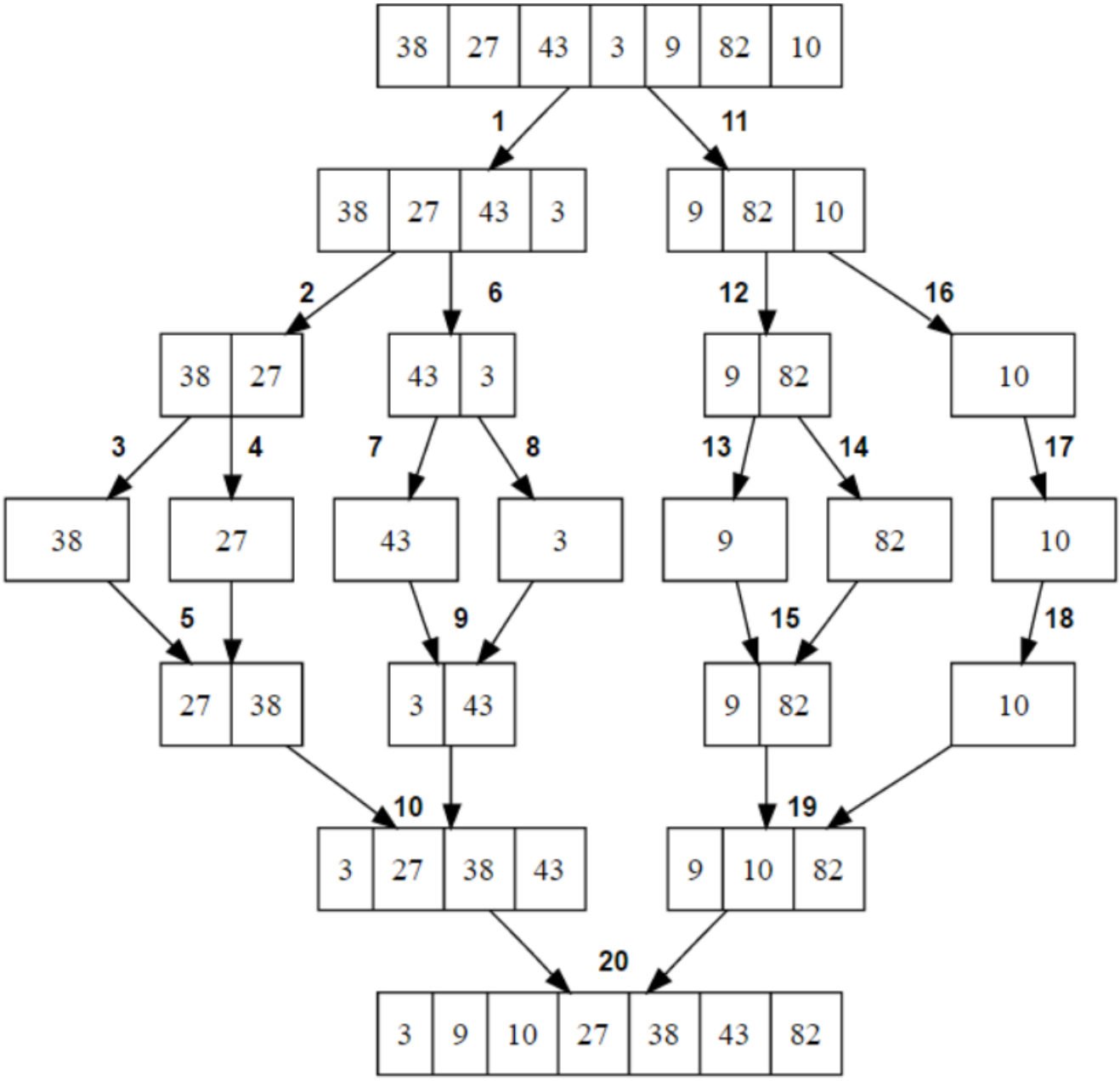
Merge sort is an efficient sorting algorithm that produces a stable sort, which means that if two elements have the same value, they hold the same relative position in the sorted sequence as they did in the input. In other words, the relative order of elements with equal values is preserved in the sorted sequence. Merge sort is a comparison sort, which means that it can sort any input for which a less-than relation is defined.

How Merge sort works?

Merge sort is a Divide and Conquer algorithm. Like all divide-and-conquer algorithms, merge sort divides a large array into two smaller subarrays and then recursively sort the subarrays. Basically, two steps are involved in the whole process:

1. Divide the unsorted array into n subarrays, each of size 1 (an array of size 1 is considered sorted).
2. Repeatedly merge subarrays to produce new sorted subarrays until only 1 subarray is left, which would be our sorted array.

The following diagram represents a top-down view of the recursive merge sort algorithm used to sort a 7-element integer array: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